

# WINAUTO



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## User's Manual

Car subwoofer box FLI Underground FU 10A F1 active

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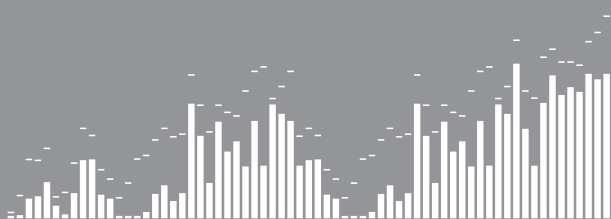


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**INSTRUCTION &  
INSTALLATION MANUAL**



**ACTIVE  
ENCLOSURE**

**MODEL: FU10A, FU12A, FU12TA**

Thank you for purchasing this FLI UNDERGROUND subwoofer enclosure. It will provide you with years of trouble free usage providing you follow a few simple guidelines.

## INTRODUCTION

This instruction manual is for your safety and must be adhered to at all times. Please read and ensure that you fully understand the installation and set up procedures as explained. If you are unclear on the installation or set up of your FLI UNDERGROUND subwoofer enclosure please contact your nearest authorised FLI UNDERGROUND dealer.

### WARNING

**DO NOT EXPOSE THIS PRODUCT TO DAMP OR MOISTURE** - doing so may result in fire, shock or damage to the product.

**BEFORE WIRING DISCONNECT THE CABLE FROM THE POSITIVE BATTERY TERMINAL** - failure to do so may result in electric shock or injury.

**ENSURE GOOD AND CORRECT CONNECTIONS** - failure to make the correct connections may result in fire or damage to the product.

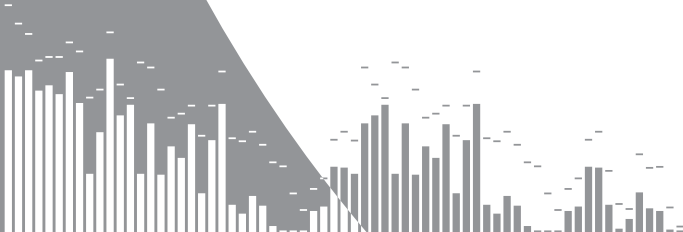
**KEEP THE VOLUME AT A LEVEL SO YOU CAN STILL HEAR OUTSIDE NOISE** - failure to do this may result in an accident. FLI UNDERGROUND equipment is capable of producing sound levels that can permanently damage your hearing. FLI UNDERGROUND recommends caution when listening at high volume. For safe and enjoyable listening the sound should be comfortable and clear without distortion.

### CAUTION

- Never connect any speaker lead to the car chassis. This can cause severe damage to your speaker / car radio / amplifier.
- Before drilling or cutting any holes, investigate the layout of your vehicle thoroughly.
- Use caution when working near the fuel / hydraulic lines and electrical wiring.
- Observe the correct polarity when wiring, improper phasing may cause a loss of bass response.
- Ensure that no moving parts catch on the speaker or grill (e.g. window or door handles, or window glass inside the door)

### INSTALLATION

- The quality of the installation will affect the system performance and reliability.
- Contact your nearest authorised FLI dealer if you are unsure about the installation of this product.
- Please mount this unit away from any potential hazards.
- Minimising the length of wires will provide higher audio output from the system.
- The speaker should be securely fastened to the mounting position using the screws provided.
- Pre drill your mounting holes using a drill and position with the template provided.
- Be sure to investigate your mounting area thoroughly for electrical wires, brake or fuel lines or fuel tank to prevent causing any damage.



## RUN IN PROCEDURE

FLI recommends that you follow the run in procedure for the subwoofer detailed below.

When your subwoofer is used for the first time naturally like most brand new items it is very stiff and rigid, it will take time for the moving parts of this subwoofer to loosen up before it will be ready to deliver its full potential.

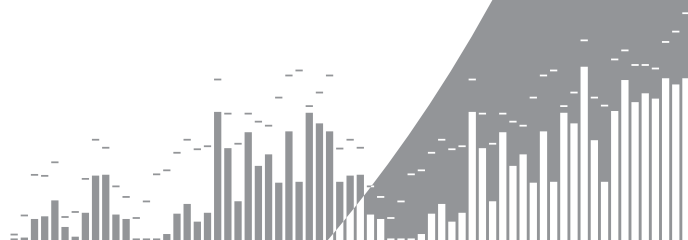
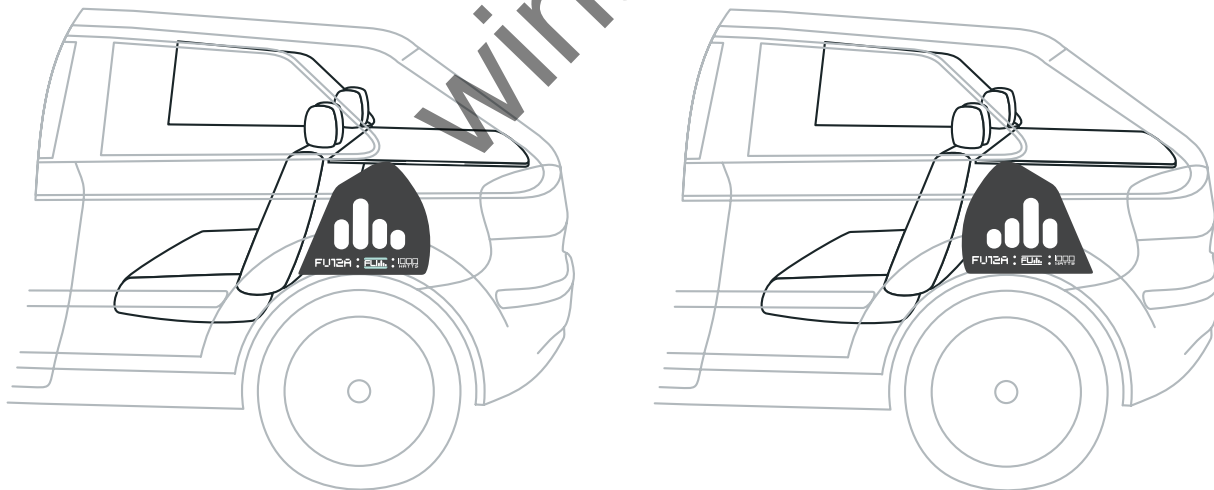
For the first 30 hours it is recommended that you play the subwoofer initially at low to medium volumes, gradually increasing the volume level as time progresses. As a guide, if you listen to it for 1 hour every day it will take a month for the speaker to run in properly. You will notice a big change in the sound of the subwoofer over this period, as the spider and surround begin to run in the sound will get deeper and punchier, also the output of it will increase as the suspension loosens up.

A new subwoofer is like a new car engine, it needs a few thousand miles before you can drive it to its full potential, driving it into the 'red line' from the first day will mean engine damage is certain and will not be covered by warranty and the same applies to the subwoofer. Failure to follow this simple procedure is the most common reason for a subwoofer to fail after a very short period of time.

## INSTALLATION

The most common place to mount a bass enclosure is in the luggage compartment of the vehicle. Where in the luggage compartment it is mounted will have an effect on the sound produced allowing the user to tailor the sound to best suit their musical tastes. For example if the enclosure is mounted facing the rear bumper, the bass produced will be noticeably deeper than if it is fired into the rear seat.

Do not be afraid to experiment with positioning as a little time and effort can yield great improvements in sound.



## ACTIVE ENCLOSURE INSTALLATION

Your FLI UNDERGROUND enclosure is designed with a swift installation routine in mind. Please mount the enclosure in a dry location on a solid surface. NEVER mount the enclosure upside down, this will cause the amplifier to overheat and will eventually damage the amplifier. Before fixing the enclosure in place please ensure that there is sufficient air flow around the amplifier heatsink, at least two inches will be sufficient.

### POWER CABLE

- At least a 10 gauge cable should be used for both the power and the ground connections to the amplifier.
- The power cable should be taken directly from the battery. Rubber grommets should be used when passing through any bulkheads to prevent the cable from becoming chaffed or cut.
- It is vital that a fuse / circuit breaker (of at least equal value to the one fitted on the amplifier) is placed in line with the power cable and is no further than eighteen inches away from the battery.
- Please ensure that the fuse is not fitted until the entire installation procedure is complete.
- The two tables below are to help you decide on what cable is correct for you. The first enables you to select the size of cable depending on the length required. The second will help you convert the cable size from American Wire Gauge to Metric if you need to.

Current demand	Length of Run							
	0 – 4 Ft	4 – 7 Ft	7 – 10 Ft	10 – 13 Ft	13 – 16 Ft	16 – 19 Ft	19 – 22 Ft	22 – 28 Ft
0–20 amps	14	12	12	10	10	8	8	8
20–35 amps	12	10	8	8	6	6	6	4
35–50 amps	10	8	8	6	4	4	4	4
50–65 amps	8	8	6	4	4	4	4	2
65–85 amps	6	6	4	4	2	2	2	0
85–105 amps	6	6	4	2	2	2	2	0
105–125 amps	4	4	4	2	0	0	0	0
125–150 amps	2	2	2	0	0	0	0	0
1 Metre – 3.28 Feet								

AWG to Metric Conversion Chart cross sectional area			
AWG Number	Inch	mm	mm <sup>2</sup>
0	0.325	8.25	53.5
1	0.289	7.35	42.4
2	0.258	6.54	33.6
3	0.229	5.83	26.7
4	0.204	5.19	21.1
5	0.182	4.62	16.8
6	0.162	4.11	13.3
7	0.144	3.66	10.5
8	0.128	3.26	8.36
9	0.114	2.91	6.63
10	0.102	2.59	5.26

## GROUND CABLE

- The ground cable needs to carry the same current as the power cable. At least a 10 gauge cable should be used.
- The amplifier ground should be connected directly to the chassis of the vehicle, to bare metal.
- The cable length should be kept to an absolute minimum. It is not recommended that you connect the ground cable to the vehicle's seatbelt anchor point.

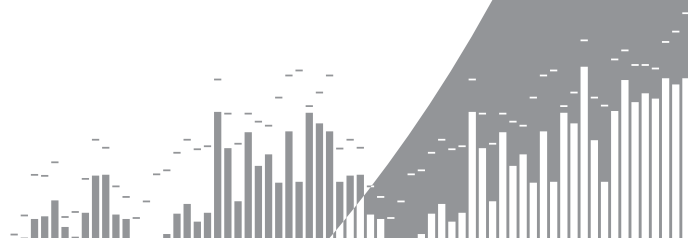
## REMOTE TURN ON

- A minimum of 18 gauge cable should be used for this connection.
- The cable should be run with exactly the same care and attention as the power cable and taken back to the source (headunit) and joined to the remote cable provided.
- If the source (headunit) does not have a remote turn on cable then a 12v supply should be used. This will require a switch to be fitted inline to enable the amplifier to be turned on and off. Remember that if this switch is left on you will flatten the car battery.

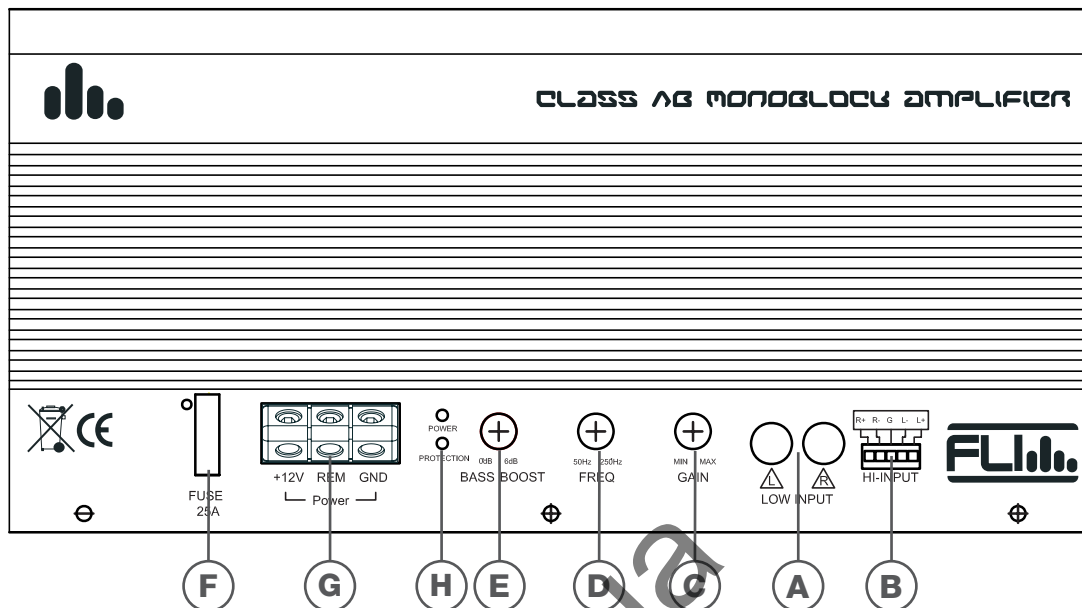
## RCA CABLES

- Please take extra care when running these cables from the source to the amplifier. Ensure that they are placed away from all items that can generate any interference, wiring harnesses etc.
- It is recommended that the RCA cables should be run on the opposite side of the car to any previously installed power cables, if possible.

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## AMPLIFIER CONNECTIONS &amp; CONTROLS

**A. LOW LEVEL INPUT**

Low level input for connection to any source (headunit) with a low level output. This is your RCA output from the source (headunit).

**B. HIGH LEVEL INPUT**

To be used when no RCA's are available. Use the provided loom to connect to the closest speakers.

**C. GAIN CONTROL**

Used to match the input signal of the source (headunit) to the amplifier. See the setup section for more details.

**D. CROSS OVER FREQUENCY CONTROL**

High pass frequency control. The frequency ranges from 50hz to 250 Hz.

**E. BASS BOOST CONTROL**

To provide up to an extra +6 dB of bass boost at 45 Hz. Use this boost to increase bass output from the amplifier.

**F. FUSE**

Please ensure the following fuse rating is used when replacing fuses:

FLI UNDERGROUND FU10A, FU12A (20 amp)

FLI UNDERGROUND FU12TA (25 amp)

**G. POWER CONNECTIONS**

Power connections. See Connections section for details on correct connections.

**H. POWER PROTECT LIGHT**

When the amplifier is operating correctly the light will illuminate constant 'green'. When the amplifier is in power protection mode the light will illuminate 'red'.



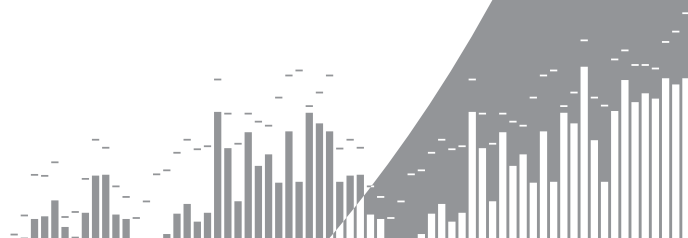
## SET UP SECTION

To correctly set the gain control of the amplifier to match that of the source (headunit) use the following setup routine:

- Turn the gain control to minimum on the amplifier.
- Ensure the bass boost is set to 0 dB.
- On the headunit set all crossovers to flat and both bass and treble to zero.
- Turn up the source (headunit) to approx 3/4 volume.
- Very slowly turn up the gain on the amplifier until distortion can be heard in any of the speakers or until the volume reaches an uncomfortable listening level when this is reached turn down the gain control slightly.
- The gain control is now set.

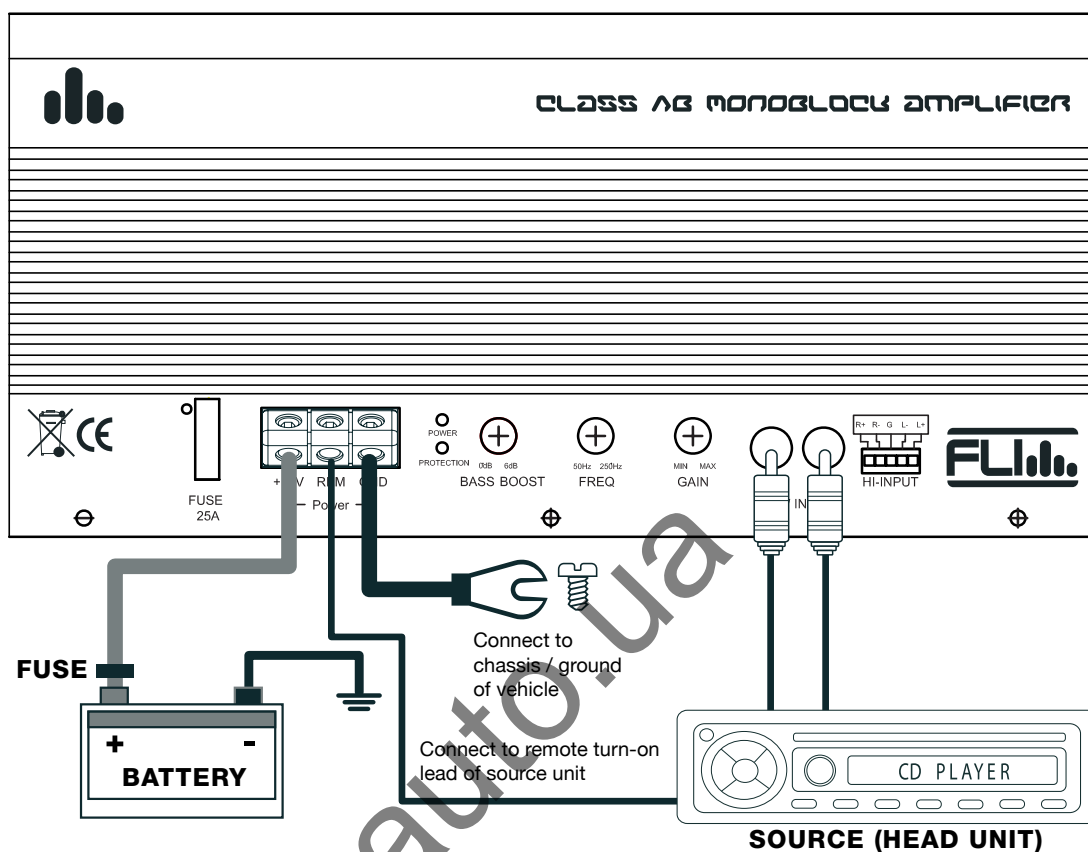
The setting of the crossover will directly effect the sound you will hear from the subwoofer. At its lowest setting (50 Hz) the subwoofer will only react to frequencies from around 35 Hz to 50 Hz. At its highest setting (250 Hz) the subwoofer will react to a larger range of frequencies from around 35 Hz to 250 Hz. Experiment with this setting to achieve a sound you are happy with that feels comfortable with the music that you listen to.

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## SYSTEM WIRING INPUT CONNECTIONS



## TROUBLESHOOTING

Before removing the amplifier, refer to the list below and follow the suggested procedure. Always test the speakers and confirm that they are wired correctly first. If in any doubt get help from a qualified auto electrician.

### AMPLIFIER WILL NOT POWER UP

- Check for good ground connections. Ensure that the ground cable is connected directly to bare metal and not a painted surface.
- Using a multimeter check the that remote terminal has at least 7V DC.
- Using a multimeter check that there is battery voltage on the positive terminal.
- Check all fuses.
- Check that the protection light is not illuminated. If it is lit, shut off the amplifier for thirty seconds and then turn it back on.

### PROTECTION LED ILLUMINATES WHEN AMPLIFIER IS POWERED UP

- The amplifier is designed to shut down automatically when the units temperature goes above 80 degrees. If the amplifier feels very hot then this may be the reason for the amplifier not starting.
- Check that there is good airflow around the amplifier. In some applications an external fan may be required.

### BLOWN FUSE(S)

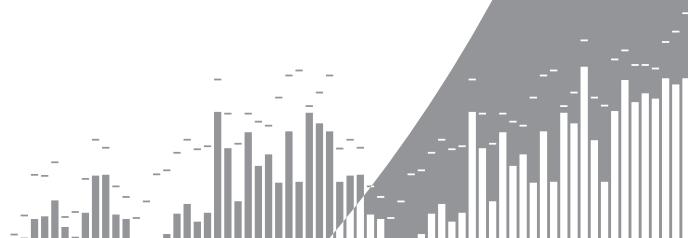
- Check both positive supply and ground for shorts.
- Check that the positive wire is connected to the positive terminal on the amplifier.
- Check that the negative wire is connected to the ground terminal on the amplifier.
- Ensure that the correct rated fuse is fitted:

FLI UNDERGROUND FU10A, FU12A (20 amp)

FLI UNDERGROUND FU12TA (25 amp)

### DISTORTED SOUND

- Check the gain control is not set at too high a level. If the sound is distorted turn the down the gain until the sound is clear.
- Check that all crossover frequencies are correct. See Setup section for more details.
- Check that the ground cable is making good contact with the vehicle chassis.
- Check the the RCA cables are making good connection with the source and amplifier.



## SPECIFICATIONS

Model	FU10A	FU12A	FU12TA
Driver	FU10	FU12	FU12 x 2
Amplifier	FU150.1	FU150.1	FU300.1
RMS power	250 watts	300 watts	600 watts
Peak power	800 watts	1000 watts	2000 watts
Impedance	4Ω	4Ω	4Ω
Height	12.5" (317mm)	13.7" (347mm)	13.7" (347mm)
Depth	14.5" (369mm)	15.9" (405mm)	15.9" (405mm)
Width	12.2" (310mm)	14.2" (360mm)	28.3" (720mm)



In order to protect your purchase and aid your warranty please fill in the following form and keep it safe for your future reference.

For more information and to register your warranty online, visit:

**[www.fliaudio.com/warranty](http://www.fliaudio.com/warranty)**

**MODEL NUMBER:**

**SERIAL NUMBER:**

**PURCHASED FROM:**

**DATE OF PURCHASE:**

**KEEP IT SAFE**  
Staple your receipt here:



### LIMITED WARRANTY

All FLI goods are covered by a full 12 months manufacturers warranty. Valid from the date of the original receipt and proof of purchase. In order to validate this warranty, the warranty card should be returned to FLI within seven days of the original purchase date. The original receipt and packaging should also be kept for this 12 month period.

If at any stage during the warranty period you have a problem with the product then it should be returned to the point of purchase in its original packaging, complete and with no items missing. If the store is unable to fix the product it may have to be returned to FLI this process takes around 7 working days.

A full description of FLI's warranty information can be found on our website: [www.fliaudio.co.uk/warranty](http://www.fliaudio.co.uk/warranty)

A written version can also be obtained from:  
FLI warranty department  
PO Box 11000  
B75 7WG  
UK

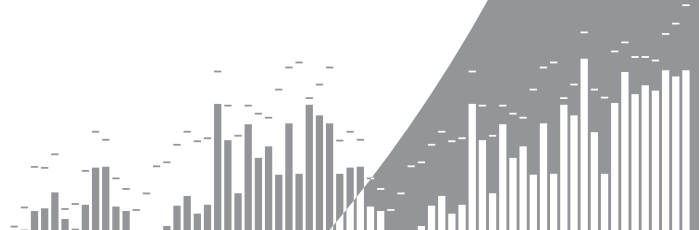
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# FLI

## UNDERGROUND

AVAILABLE NOW IN THE  
FLI UNDERGROUND RANGE:

### SPEAKERS



### SUBWOOFERS



### AMPLIFIERS



### ENCLOSURES

